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***Journal of Research of the***

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# **National Institute of Standards and Technology**

**T**he National Institute of Standards and Technology was established in 1988 by Congress to “assist industry in the development of technology . . . needed to improve product quality, to modernize manufacturing processes, to ensure product reliability . . . and to facilitate rapid commercialization . . . of products based on new scientific discoveries.”

NIST, originally founded as the National Bureau of Standards in 1901, works to strengthen U.S. industry’s competitiveness; advance science and engineering; and improve public health, safety, and the environment. One of the agency’s basic functions is to develop, maintain, and retain custody of the national standards of measurement, and provide the means and methods for comparing standards used in science, engineering, manufacturing, commerce, industry, and education with the standards adopted or recognized by the Federal Government.

As an agency of the U.S. Commerce Department’s Technology Administration, NIST conducts basic and applied research in the physical sciences and engineering, and develops measurement techniques, test methods, standards, and related services. The Institute does generic and precompetitive work on new and advanced technologies. NIST’s research facilities are located at Gaithersburg, MD 20899, and at Boulder, CO 80303. Major technical operating units and their principal activities are listed below. For more information contact the Public Inquiries Desk, 301-975-3058.

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- Quality Programs
- International and Academic Affairs

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- Standards Services
- Technology Commercialization
- Measurement Services
- Technology Evaluation and Assessment
- Information Services

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- Ceramics
- Materials Reliability<sup>1</sup>
- Polymers
- Metallurgy
- Reactor Radiation

### **Chemical Science and Technology Laboratory**

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- Analytical Chemical Research
- Process Measurements
- Surface and Microanalysis Science
- Thermophysics<sup>2</sup>

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- Atomic Physics
- Molecular Physics
- Radiometric Physics
- Quantum Metrology
- Ionizing Radiation
- Time and Frequency<sup>1</sup>
- Quantum Physics<sup>1</sup>

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- Automated Production Technology
- Intelligent Systems
- Manufacturing Systems Integration
- Fabrication Technology

### **Electronics and Electrical Engineering Laboratory**

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- Law Enforcement Standards
- Electricity
- Semiconductor Electronics
- Electromagnetic Fields<sup>1</sup>
- Electromagnetic Technology<sup>1</sup>
- Optoelectronics<sup>1</sup>

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- Building Materials
- Building Environment
- Fire Safety
- Fire Science

### **Computer Systems Laboratory**

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- Information Systems Engineering
- Systems and Software Technology
- Computer Security
- Systems and Network Architecture
- Advanced Systems

### **Computing and Applied Mathematics Laboratory**

- Applied and Computational Mathematics<sup>2</sup>
- Statistical Engineering<sup>2</sup>
- Scientific Computing Environments<sup>2</sup>
- Computer Services
- Computer Systems and Communications<sup>2</sup>
- Information Systems

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<sup>1</sup> At Boulder, CO 80303.

<sup>2</sup> Some elements at Boulder, CO 80303.

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The Journal of Research of the National Institute of Standards and Technology features advances in measurement methodology and analyses consistent with the NIST responsibility as the nation's measurement science laboratory. It includes reports on instrumentation for making accurate and precise measurements in fields of physical science and engineering, as well as the mathematical models of phenomena which enable the predictive determination of information in regions where measurements may be absent. Papers on critical data, calibration techniques, quality assurance programs, and well-characterized reference materials reflect NIST programs in these areas. Special issues of the Journal are devoted to invited papers in a particular field of measurement science. Occasional survey articles and conference reports appear on topics related to the Institute's technical and scientific programs.

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